United States Department of Agriculture | Forest Service | Toiyabe N.F.

Reply to: 5190 Administration

Date: January 3, 1986

Subject: Long Tom Complex Fire Review

To: Regional Forester, R-4
Attn: Doug Bird
Director, A&FM

Enclosed is the 1985 Long Tom Fire Complex Fire Review Report, Salmon National Forest, Region 4. The review was conducted by Jerry Monesmith, Dick Flannelly, Bert Strom and myself on November 4-8, 1985.

Overall, the review team felt the Region, Forest and overhead teams performed very well. The Long Tom complex of fires required exceptional endurance and good decisions for several months. We have noted 12 commendations in our report.

The review team also identified and analyzed 11 issues. We developed alternatives for each of these issues and think they can be the basis for an action plan that will reduce suppression costs, improve suppression efficiency and minimize resource impacts on future large fires in the Salmon River area.

We appreciate the excellent staff work and support furnished by the Salmon National Forest and RO Aviation & Fire Management personnel. Jim Webb provided top support and guidance to us during our review.

Jim

JAMES A. LAWRENCE
Deputy Forest Supervisor

Enclosure

cc (w/encl.):
Jerry Monesmith, WO
Dick Flannelly, WO
Bert Strom, Boise NF

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FIRE REVIEW OF THE 1985 LONG TOM FIRE COMPLEX

Salmon National Forest, Region 4

Review conducted: November 4-8, 1985.

Review Team:

Jerry Monesmith, Safety and Training, Aviation and Fire Management, Washington Office

Dick Flannelly, Employee Development and Training, Personnel Management, Washington Office

Bert Strom, Fire Management Officer, Emmett Ranger District, Boise National Forest, Region 4

Jim Lawrence, Deputy Forest Supervisor, Toiyabe National Forest, Region 4 (Team Leader)

OBJECTIVES

A four-person fire review team was established by the Regional Forester: to address the following objectives on the Long Tom Fire Complex, Salmon National Forest;

1. Critique strategy and tactics using the following criteria:

   a. Minimization of FFF costs and damages.

   b. Safety.

   c. Compatibility with resource management objectives.

2. Specifically review the series of events leading up . the deployment of 73 fire shelters on the Butte Fire.

3. Evaluate effects of long term stress on line officers.

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and to identify needed changes or corrections in policy, management, procedures, equipment, or performance.

APPROACH USED

The team received a thorough briefing on their assignment from Doug Bird and Jim Webb. We then reviewed and made an independent analysis of the EFSAs, shift plans, fire weather, and behavior predictions of incident status reports and other reference material listed in the appendix. We then interviewed the Salmon Forest Supervisor and staff, selected overhead team members, and strike team leaders. Our draft report was reviewed with Supervisor Hauff and then presented to the Regional Forester on November 8, 1985. The report is to be reviewed by the Region's Fire Staff Officers and an action plan developed during their workshop scheduled for the week of November 18-22.

SITUATION

The year 1985 was an extremely tough and active fire year on the Salmon National Forest and throughout the west. The season started with hot and dry conditions in May. One thousand-hour fuel moistures were averaging 15 percent and live fuel moistures also were very low. The Forest started to receive lightning starts in June, and aggressive initial attack was required for control.

The Long Tom Fire Complex (Fountain, Ebenezer, Goat, and Butte Fires) started with lightning-caused fires July 7, 1985, in Fountain and Ebenzer Creek. These two fires were located in the steep narrow canyons of the Salmon River Breaks. The Forest took control action, but the Fountain Fire blew out for the first time on July 9. It took out the head of Fountain Creek in a matter of minutes, crowning and spotting up to one-half mile. A Region 4 Class I Overhead Team was ordered and took over the fire after the escape. They had problems containing the two fires because of erratic fire behavior. The control strategy was indirect attack. The Ebenezer Fire was contained at 4,025 acres.

On July 20, the Fountain and Butte Fires blew up because of strong winds. The Butte Fire went from a spot to 400 acres in approximately one and one-half hours, crowning and spotting. The upper end of the fire was in heavy timber fuels, and for the next two weeks it would crown in the afternoon because of winds from thunder cells and drops in humidity and burn several hundred to several thousand acres per day.

The Forest gave priority to control of the Fountain and Ebenezer Fires before directing the efforts of the Overhead Team on Butte Fire. In early August, the weather patterns changed to higher humidities and some precipitation. On August 10 and 11, snow fell on the upper part of the fire, and the Overhead Team turned it back to the Forest. Mop up continued. By August 21, there was a warming trend and spots started showing up. One of the spots crowned out in a previously-burned area and could not be stopped from escaping the perimeter. The escape became the Sourdough Fire at this time. This was later renamed Butte #2. The same Class I Team was reassigned to the Complex. For the next 6 days, the fire crowned and spotted making major runs up to a thousand acres and more. On August 29, there was a run of over 3,000 acres and 73 fire fighters had to deploy their fire

shelters in safety zones. They were overrun by the fire, but fortunately no serious injury or loss of life occurred. Fire behavior was extreme.

The Goat Creek Fire, in the Frank Church-River-of-No-Return Wilderness, was also burning throughout this period of active fires. The Escape Fire Situation Analysis decision was confinement, and no serious problems were encountered in meeting this strategy. Approximately 6,000 acres burned, and the suppression costs were $30,000.

Total acres burned in the Fountain, Ebenezer, and Butte Fires were over 37,000 acres, and the final suppression costs exceeded $7 million dollars.

COMMENDATIONS

The Team felt the Region, Forest, Overhead Teams and others involved in the Long Tom Fire Complex suppression effort performed very well. It was a tough, complex, and long-term situation that required exceptional endurance and good decisions for several months. Specific commendations are as follows:

1. Forest requested Class I Teams in a timely manner.

2. Forest Supervisor Hauff and/or the District Resource advisors were personally on the fire every day. There was excellent participation/interface with the overhead teams.

3. The Overhead Teams were responsive to the Forest Supervisors objectives and constraints.

4. There was good priority setting on the entire complex, i.e., hit Corn Lake and Bear Fires hard and fast to keep fire out of the Horse Creek drainage, use confinement on Goat Creek which resulted in significant cost savings and safety, and control Ebenezer and Fountain first, then get on Butte when suppression forces became available.

5. Outstanding decision making and independent action was taken by Strike Team Leaders and Crew Bosses involved in deployment of fire shelters.

6. The Overhead Team's construction of adequate safety zones saved lives or prevented serious injury during the burnover of 73 fire fighters.

7. Medical Unit Leader, Jan Henderson from BIFC, displayed exceptional performance in injury prevention, then during activation of the emergency medical plan after fire shelter deployment.

8. The Salmon National Forest personnel performed exceptionally well throughout the intense and long duration fire season, even though there had been a change in some key personnel.

9. The Overhead Team and Forest fire personnel made special effort to rest fatigued crews.

10. A lot of community good will was gained through public information efforts and a decision to procure locally when possible. The community responded well. Interagency procurement team paid bills promptly.

11. The Forest rehab team was activated during the fire and completed plans promptly.

12. Idaho National Guard assistance contributed significantly to the fire suppression support activities.

ISSUES

Issue #1: Escaped fire situation analyses were not prepared, reviewed, or updated as fire condition or strategies changed, or when the Butte Fire escaped containment.

Situation

1. An escaped fire situation analysis was prepared on July 22, 1985, two days after Butte #1 started. At this time, the fire was 5,000 acres. The fire strategy selected was not followed. On July 25, a long-term EFSA was prepared for the Long Tom Complex. The two alternatives of this EFSA are nearly identical. There is no documentation that the EFSA was reviewed or updated between July 25 and August 5 when the fire was contained.

2. Butte #2 (Sourdough) became active on August 25. This fire started by a flare-up and spotting from the upper corner of Butte #1. It was stated by the Forest that the EFSA prepared for Butte #1 on July 25 was still in effect. There is no documentation that this was reviewed or updated. Butte #2 (Sourdough) was contained on September 5. Review may have been verbal.

Cause: The Forest stated that the escaped fire situation analysis prepared on July 25 was felt to still be valid. The Forest and Overhead Teams were not aware that the EFSA was to be reviewed and signed-off each shift.

Alternatives

1. Region ensure line officers are familiar with requirements for review and documentation of the escaped fire situation analysis.

2 Region ensure Incident Commanders and Forest Supervisors review escaped fire situation analysis at the initial overhead briefings. At that time, it will also be established when the EFSA will be reviewed and who will sign-off.

3. Use the August 1984 revised Escaped Fire Situation Analysis form.

Issue #2: Using the cost/benefit model in escaped fire situation analysis (EFSA) decision making does not work well in Salmon River Country.

Situation:

1. The Forest's suppression guidelines are very general (except for the River-of-No-Wilderness area). It is difficult for the line officer to select an EFSA alternative based upon analysis of cost versus damages. Supervisor Hauff's primary decision criteria were suppression costs, safety and the protection of private property.

2. The resource values don't usually justify the high cost of fire suppression. The primary resource concern is protection of anadromous fisheries. Sedimentation is increased significantly as the result of dozer work.

3. Another problem is that fire spread cannot be predicted over a long term (1 to 3 months). If the decision is made to use confinement strategy because the initial attack cost of suppression exceeds resource values, and then the fire spreads outside of planned boundaries into high value resource areas, or increases to unacceptable size, then suppression costs are very high.

Causes:

1. The Forest has not had an opportunity to develop specific fire management planning guidelines.

2. The Salmon NF does not have adequate resource value information for the EFSA.

3. We do not have the skills to evaluate long-term/worst-case scenarios.

Alternatives:

1. Continue to made EFSA confinement alternatives and decisions based upon personal expectation of long-term success.

2. Develop specific fire management/suppression guidelines.

3. Develop long-term prediction abilities.

4. Utilize decision trees and fire effects information to make better long-term decisions.

Issue #3: Control lines on both the Butte #1 and #2 Fires are excessive in width to meet resource objectives.

Situation

1. There are 37.4 miles (224 acres) of fireline constructed to the width of five to six dozer blades around and throughout the burned area. Many system roads were also widened as control lines. These lines and roads contribute to the sedimentation load of anadromous fisheries spawning areas in Owl Creek.

2. It is estimated that 80 percent of the constructed lines were either lost to burnover or were not burned to.

Causes

1. Extreme fire behavior and the heavy fuel type within the area prompted the need to construct over-width lines to be used for burnout control.

2. It would appear that the indirect attack lines were not constructed far enough ahead to allow burnout before the fire front approached or spotted-over.

Alternatives

1. Forest Supervisors ensure overhead briefings outline past fire control successes and failures, as well as setting firm constraints for control lines.

2. Forest Supervisors and overhead teams ensure management strategy and control tactics are planned and control lines located to allow for timely burnout. The key is the burnout black line for control.

3. Region 4's large fire evaluation teams should evaluate the use of wildfire control lines next season.

4. Place emphasis on training crews and overhead in burnout tactics.

Issue #4: Excessive equipment costs occurred during the suppression of the Butte Fires.

Situation: The Forest reported that high suppression costs were incurred in the area of dozer and air tanker use. The fire situation on the Salmon NF had depleted local equipment; large dozer had to be moved in from long distances. Equipment rates for equipment were out of line, and in some cases not equal, as in the case of prehired equipment and equipment hired at the time of the fire.

Long travel time to the Salmon River Country increased cost and limited effective use of air tankers.

Causes: Lack of local expertise in the area of equipment contracting and unreasonable equipment rates caused a major problem and high costs.

Dozer bosses and managers are not readily available and often not ordered early, thus causing a misunderstanding of who takes care of equipment time and the management of dozer equipment. Cats often showed up on the fire and were not properly signed up.

In many cases, the mission for which an airtanker was ordered changed due to the length of time it took to arrive, resulting in higher costs and ineffective use.

Alternatives

1. Include contracting officer and knowledgeable equipment person as part of the ICS organization or Regional procurement team.

2. Order dozer managers as part of the overhead organization early, when dozers are a major part of the suppression effort.

3. Region review and bring equipment rate guidelines into line.

4. Investigate using a portable retardant plant closer to the Salmon River during a major fire incident.

5. Utilize preseason agreements more and increase numbers of agreements as Regional preparedness levels reach critical levels.

The team specifically reviewed the series of events leading up to the deployment of 73 fire shelters on the Butte Fire.

Issue #5: Fire spread prediction did not come close to actual spread on August 29.

Situation: The weather on the Butte Fire from Monday, August 26, through Friday, August 30, was not particularly unusual or unique. Typical late afternoon maximum temperatures reached 70 to 78 degrees Fahrenheit with minimum relative humidities in the 12 to 20 percent range. On August 29, the afternoon temperatures were in the mid-70s and minimum relative humidities in the teens. General winds were out of the south at 8 to 12 miles per hour in the afternoon with occasional gusts from 17 to 20 miles per hour. Strike Team Leaders at the head of Wallace Creek estimated steady winds of 15-20 miles per hour with some higher gusts on this afternoon of August 29.

The fire made significant runs on August 26, 27, 28, and 29, which were 700, 800, 1300, and 3,500 acres, respectively, with forward rates of spread of 0.75, 1.0, 1.0 and 2.5 miles, respectively. Direction of spread on August 26 to 28 was east-northeast, and north on August 29.

The fire perimeter projections for August 27 and 28 were very good at about an 80 percent-plus accuracy. The projection for August 29 was a growth of approximately 1,200 acres in a northeast-east direction. Rate of spread projections for August 29 were 8 to 10 chains per hour and some estimated the actual rate of spread at 8 to 10 chains per minute.

Causes

1. Present fire behavior spread models do not project crowning fire spread rates accurately.

2. Without a significant change in the weather, the fire was expected to progress easterly up Owl Creek rather than north up Wallace Creek.

3. It does not appear projections were adjusted for the steady 15-20 miles per hour. Southerly winds witnessed by the Strike Team Leaders had not occurred at that time of day previously. This may not have been done because of a breakdown in communications and the FBA and Operations Chiefs' concentration on the helitorch burnout operation on the southeast side of the fire.

Alternatives

1. Region request the WO place emphasis on crowning and large fire spread modeling research.

2. Fire Behavior Analysts develop worst-case predictions using judgment estimates for crowning.

Issue #6: Fire behavior analysis did not project a burnover.

Situation: Over 118 persons were overrun by fire on the afternoon of August 29. Seventy-three of these people deployed their shelters which is believed to have saved their lives. The deployments occurred at the north end of the fire at the head of Wallace Creek.

Fire behavior predictions were discussed earlier in Issue #5, pages 11-12. The Incident Commander, Operations Section Chief, Fire Behavior Analyst (FBA), and one of the Division Supervisors were fully qualified FBOs. FBA's Operations Section Chief, Bill Williams, is, and has been, an active leader nationally in the field of fire behavior and serves as an instructor during national training. He is also highly experienced in Salmon River fire suppression. The fire had spread uniformally and according to predictions for three days. Based on those historical trends and the absence of a significant change in the weather, it was expected the fire would take two days to reach the area where the shelters were deployed. Instead, it took only minutes, at least for the last mile or so.

Considering the fire behavior expertise on the Overhead Team and the situations involved, the Review Team believes it would have been unreasonable to expect an accurate prediction of the fire growth on the 29th, especially at the rate at which it advanced.

Causes and Alternatives: Same as those for Issue #5.

Issue #7: The crews were not warned in sufficient time to evacuate.

Situation: At about 1230 - 1300 hours on August 29, a Strike Team Leader, located on Tin Cup Hill at the head of Wallace Creek, reported to the Division Supervisor that he could see a column of smoke building below. The remainder of the crews at the head of Wallace Creek were in heavy timber which restricted their visibility. At approximately 1430, the Strike Team Leader again reported to the Division Supervisor that the column was continuing to build. The Division Supervisor reported the situation to the Branch Director and was told not to worry because it was coming from the helitorch burnout in Owl Creek which he was keeping an eye on. The Strike Team Leader recognized at about 1500 hours that they were looking at two different smoke columns. The Branch Director concurred that this was possible because the main fire smoke column restricted his view into Wallace Creek. At that point, the Division Supervisor requested an aerial reconnaissance and instructed the crews to leave the line. Within 10 minutes, he instructed them to stop because they would not have time to make it out. Once the wind shifted, the crews independently made the decision to backfire based on hearing the fire coming and independently deployed their shelters which was necessary in a matter of seconds (10-15).

During this time, one helicopter was at the helibase and another was being used in the helitorch operations occupied by the Operations Section Chief, Air Attack Supervisor, and the Fire Behavior Analyst This group could not see the activity in Wallace Creek because of the main fire smoke column. Shortly after the request for reconnaissance, the Air Attack Supervisor flew toward the head of Wallace Creek. Realizing they were about out of fuel and seeing the activity, they requested the helicopter from the helibase. They made a pass over the head of Wallace Creek and returned to the helibase. Within these few minutes, the fire passed over the crews without warning.

Causes

1. The Branch Director, Operations Section Chief, Air Attack Supervisor, and Fire Behavior Analyst were preoccupied with the helitorch operation. The Operations Section Chief believed manual direction required that he and the Air Attack Supervisor be directly involved in the helitorch operations.

2. Fire was not expected to explode northerly up the Wallace Creek drainage.

3. Aerial reconnaissance (lookout) was not maintained as was the rule for the previous days. The Strike Team Leaders were assuming aerial observation was taking place.

4. Breakdown of communications between the crew/Strike Team level and the line overhead.

Alternatives

1. Forest Supervisors ensure fire teams follow 10 standard fire fighting orders at all times.

2. Region alert overhead teams about the possibilities of being preoccupied with helitorch operations in wildfire situations.

3. Forest Supervisors remind overhead teams to carefully monitor weather conditions throughout the burning periods to determine any necessary adjustments to fire behavior predictions.

4. Region complete Helitorch Operations Handbook that updates burnout organization.

PERSONNEL MANAGEMENT

Issue #8: Tired crews reduced productivity, created morale problems, and contributed to the accident rate.

Situation

1. Many crews on the Butte Fire (Sourdough) had been working on fires for 42 of the past 50 days (including some overhead).

2. Crews were arriving on the Butte Fire in a fatigued condition. Some drove from previous fires with no rest in between.

3. Crews also were arriving with active cases of poison oak/ivy, and other illnesses.

4. Fatigue is a likely factor in irritability in crews and numerous requests for return to home units.

5. Fatigue is also a likely factor in accidents and other medical problems, e.g., colds, flu, low energy, and minor sprains.

Causes

1. The long fire season without breaks in many western Regions.

2. Poor physical conditioning for some firefighters.

3. "Hurry syndrome" in putting crews on fires.

4. Mobilizing during the night followed immediately by line duty.

Alternatives

1. Establish mandatory breaks when shifting crews between fires.

2. Establish minimum rest periods in each 24-hour interval of fireline work.

3. Better utilization of the Medical Unit Leader (see Issue #9).

Issue #9: Qualifications and performance requirements of the Medical Unit Leader are not adequate.

Situation

1. Performance expectations for the Medical Unit Leader, and for the management of medical field stations, have not been established. This includes provisions for the dispensing of medicines.

2. The Butte Fire (Sourdough) was fortunate to have the services of Jan Henderson (see commendations) who was able to perform preventive actions as well as treating injuries. Ms. Henderson also established a network of crew medics who could keep her advised of the crews' physical condition.

3. A competent Medical Unit Leader can advise fire overhead regarding the physical status of crews in critical areas such as fatigue, dehydration, and general morale as well as treating injuries.

Causes

1. Lack of knowledge as to what benefits could result from a competent Medical Unit Leader.

2. Lack of written National standards.

Alternatives

1. Establish National qualification standards for the Medical Unit Leader, and for the management of medical field station including the dispensing of medicines.

2. Investigate the feasibility of establishing medical unit teams.

Issue #10: Inadequate attention and followup were given to the personnel who were "burned-over" in the shelter deployment incident.

Situation

1. Medical Unit Leader screened all personnel who deployed shelters.

2. Plans wanted these firefighters back on the line the next day. The Medical Unit Leader recommended additional rest and medical observation for six specific people.

3. No one was in camp to meet these crews when they returned from the medical screening. In fact, the camp had been moved, their personal gear was scattered, and only rations were available for food.

4. These crews had been through a traumatic emotional experience: no one monitored them in the next few days to determine if they had after effects or if they obtained adequate rest. They did experience difficulty sleeping, and encountered extreme fatigue when going back on the fireline.

5. Under these circumstances, it is also likely to exp ience abnormal levels of carbon monoxide in the blood which could impair thought processes.

Causes

1. Lack of knowledge about the effects of this exposure (also see Issue #11).

2. Not accustomed to having competent medical advice to rely upon.

3. Management more concerned about stopping the fire than meeting the needs of people.

Alternatives

1. Establish minimum rest period for anyone who has deployed a shelter in a burn-over.

2. Establish minimum period for monitoring performance of anyone who has had to deploy a shelter in a burn-over.

3. Counsel anyone who has deployed a shelter that they have the opportunity to return to their home unit.

Issue #11: Inadequate information exists on the human physiological effects of firefighting, e.g., long hours, stress, carbon monoxide, dehydration, exposure to other gaseous pollutants.

Situation

1. We often do not know how to recognize the effects of stress on fire personnel, nor how to cope with it.

2. Some controversy exists on the best fluids for fire crews (i.e., whether or not to provide carbonated beverages).

3. Fire crews frequently do not hydrate themselves sufficiently.

4. We lack knowledge on how long crews can work effectively on the fireline, both for a given shift as well as over how many consecutive days.

Causes

1. There is a lack of knowledge of the physiological effects of firefighting in the wildland environment.

2. We are only recently becoming aware that lack of information on these subjects can result in serious consequences.

Alternatives

1. Search available research.

2. Document data on known shelter deployments.

3. Initiate research projects to supply needed information.

4. Expand the use of carbohydrates in the menu for contract feeding of firefighters.

OTHER COMMENTS

1. Many folks we interviewed felt that ICS caused some communications problem and confusion of roles. They felt we are in transisiton from the Large Fire Organization concept, and we are not fully proficient in ICS. Division and Branch Chief positions are critical for effective, safe fireline operations, and these roles are not adequately understood.

2. Confinement strategy can save dollars. The key to the Escaped Fire Situation Analysis decision is being sure strategies can be met.

3. The Salmon NF Fire Staff was inexperienced, the District Ranger position was vacant, and there was a new Forest Dispatcher. Other experienced personnel were available to provide the expertise needed.

4. The Review Team did not believe personnel were placed in locations in which the shelter was relied upon as a safety factor.

5. All shelter deployments were necessary, not precautionary.

APPENDIX

Map of Long Tom Complex Fire and Major Drainages.

Map of Long Tom Complex Day Shift Report, August 29, 1985.

List of people interviewed by Review Team, November 4-8, 1985.

List of information reviewed by Team.

Regional Office, Forest Personnel, and Overhead Team Members interviewed during the Long Tom Fire Complex Review are as follows:

Regional Office, Region 4

Douglas M. Bird, Director A&FM
Jim Webb, Fire Operations Officer
Hub Harris, Regional Fire Coordinator

Salmon National Forest

Richard Hauff, Forest Supervisor
Ernie Scheider, Fire and Timber Staff Officer
Tom Patten, Fire Management Officer
Bill Adams, District Resource Advisor
Mike Nielson, Assistant Fire Behavior Officer and Class __ Incident Commander
Bob Martin, Acting District Ranger and Operations Section Chief on Region 4 Team
Nick Taylor, District Resources Advisor

Challis National Forest

Jack Ebberts, Strike Team Leader Crew
Richard Boher, Strike Team Leader Crew and Dozer Boss
Ron Yacomella, Strike Team Leader and Engine
Bob Ralphs, Strike Team Leader Dozers

Overhead Team Members

Gene Benedict, Incident Commander, Butte II, Payette NF
Bill Williams, Operations Section Chief, Butte II, Payette NF
Lou Waikart, Safety Officer, Butte I and II, Region 4
Jan Henderson, Medical Leader, BLM/BIFC

INFORMATION REVIEWED

1. Chronological narrative on the development of the Long Tom Complex, including the Corn Lake, Bear, Fountain, Goat, Ebenezer, and Butte Fires.
2. Long Tom Fire Complex suppression action/Forest Plan Guidelines.
3. Escape Fire Situation Analysis for all above fires.
4. Final cost and damage dollar estimates for each fire.
5. Fire behavior narratives for each fire.
6. AFFIRMS data for Inianola (101303) and Skull Gulch (01311), July 1 to September 10.
7. BEHAVE runs for Butte Fire for July 20-21 and August 27, 28, and 29.
8. Graphs showing:
   a. Individual fire size increases by day until contained.
   b. ERC by day.
   c. Spotting distance by day.
   d. ROS by day.
   e. Number of people by day for total area.
   f. Cost and damages by day.
   g. Hours flown by aircraft type.
9. Topography maps of fire spread by day.
10. Several representative shift plans for each fire.
11. Incident status summaries for all fires.
12. Resource damage narrative.

13. Critique of suppression action compliance with standards and guidelines in the Forest Plan.

14. Copies of Incident Commander's performance ratings.

15. Comparison of hours worked and accidents.

16. Tin Cup Hill medical evaluation.

17. Individual Overhead Team closeouts.

18. Butte Fire Shelter Deployment Report.

19. Comments from some individuals involved in the fire shelter situation.

20. Salmon NF fire debriefing summary (draft).

21. Map of predicted spread and actual Butte #2 Fire.

Please contact Jim Webb, Fire Operations Officer, Region 4, for copies of the above information.